Manitoba
Agriculture

# Grasshopper Control in Manitoba

1991

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## 1991 Manitoba Grasshopper Forecast

The Manitoba grasshopper forecast is based on an adult survey carried out by Manitoba Agriculture in the late summer of 1990. We emphasize that this is a general forecast and isolated areas of grasshopper activity may occur outside of those areas shown on the map. The areas surveyed are those where grasshoppers, over many years, have been a periodically recurring pest. This leaves large areas of the province unsurveyed and localized infestations may occur, particularly during dry periods and especially in overgrazed pasture.

The expected area of infestation is 8140 2km², with 6295 km² (242 mi²) light, 1768 km² (680 mi²) moderate and 55 km² (21 mi²) severe. This is a an increase about 2000 km² (772 mi²) over last year. Under normal conditions light infestations rarely require control. Expansions are anticipated in the southwest and in the area east of the Red River. The Red River Valley, west of the river, is expected to be similar to 1990. Although not shown on the map, late summer surveys indicate that there is potential for isolated pockets of severe infestation in areas of the Interlake, Westlake and Peonan Point. Most of these infestations would be in pasture and hayland but may pose a threat to bordering croplands.

In western Manitoba, the greatest potential for damage will be from grasshoppers moving from pastures and hayland into adjacent crops. In the eastern half of the province, young 'hoppers moving from roadside hatching areas will pose the greatest threat to crops.

### 1990 Weather Conditions

It has long been recognized that weather conditions are the most important factor in determining the amount of damage caused by grasshoppers. This was confirmed in 1990. In spite of a substantial hatch in parts of the Red River Valley early in spring, rainy and relatively cool weather throughout the area in May and June allowed good crop development. This placed crops in a favorable position to withstand grasshoppers and the dry, but not unusually hot, weather of July and August. The overall yield was above average.

In parts of the southwest where the weather continued dry throughout the growing season, yields were detrimentally affected.

### 1991 Weather Conditions

The dry summer and fall weather has allowed grasshoppers ample opportunity to lay eggs. This means that there is a potential for at least the level of infestation indicated on the map. Whether this potential is realized will now depend on the weather conditions during the early part of the growing season. Under hot, dry conditions grasshopper damage could be much greater than forecast and significant infestation could occur outside the forecast areas. Cooler, wet weather favorable for crop development, will reduce the overall impact grasshoppers on crops.

### Time of Hatching

Hatching may start as early as the first week in May during an early spring. Normally, hatching starts some time between mid-May and the first week in June, or about the time poplars begin to leaf. Hatching usually occurs over a period of two to four weeks, but may extend over longer periods under cool weather conditions. In most years hatching will be complete by the end of June.

### Where to Look for Hoppers

During hot weather 'hoppers will hatch quickly and move rapidly from an egg bed area into nearby crops. Regular and careful checks should be done in sod areas adjacent to crops, as well as in ditch banks, drainage ditches, drift ridges, pastures, forage and stubble fields. Newly hatched 'hoppers are about two mm (1/8 in.) long.

## Assessment of Hopper Populations

Before undertaking any control measures attempt to assess the degree of infestation by estimating the number of grasshoppers per square meter in infested areas. Light infestations rarely require control measures, except under hot, dry weather conditions. However, farmers should be prepared to undertake control measures when moderate to very severe infestations are present. Refer to the adjacent table for classifications of infestations which have been developed by Agriculture Canada

### Number of Young and Adult Grasshoppers Per Square Meter (Yard)

| Ration | Field | Roadside | |
|---|---|---|---|
| Normal | 0 - 4 | 0 - 6 | Control measures usually not necessary. |
| Light | 4 - 6 | 7 - 12 | " |
| Moderate | 7-12 | 13 - 24 | Control measures may be required to protect crops. |
| Severe | 13-24 | 25-48 | Control measures should be undertaken to protect crops. |
| Very Severe | over 25 | over 49 | " |

Whether control measures are required or not will depend on growing conditions.

Where conditions are favourable for crop growth, higher levels of infestation can be present before control measures are required. Under hot dry conditions and poor crop growth, low numbers of hoppers may cause enough damage to require control measures.

## When to Spray

It is very important to spray 'hoppers soon after hatching when they are still concentrated in eggbed areas and have not moved very far into bordering crops. Sprays applied to field margins at this time will often control them before they have caused much crop damage.

Where infestations occur throughout entire fields the whole area will have to be sprayed. Strip spraying is not effective.

## Recommended Insecticides

**Cereal Crops**

| Insecticide | Application Rate |
|---|---|
| Decis 5EC | 100-150 mL/ha (40-60 mL/ac) |
| dimethoate 40 | 525 mL - 1L/ha (210-405 mL/ac) |
| Furadan 480F | 275 mL/ha (110 mL/ac) |
| Lorsban 4E | 580-875 mL/ha (230-350 mL/ac) |
| malathion 50EC | 1.6 L/ha (640 mL/ac) |
| Sevin XLR PLUS | 1.25-2.5 L/ha (0.5-1 L/ac) |

**Forage Crops and Pastures**

| Insecticide | Application Rate |
|---|---|
| dimethoate 40 | 525 mL - 1 L/ha (210-405 mL/ac) |
| Furadan 480F | 275 mL/ha (110 mL/ac) |
| malathion 50EC | 1.6 L/ha (640 mL/ac) |
| Sevin XLR | 2.3-3.5 L/ha (0.5-1.4 L/ac) |

## Waiting Periods

| | Days to Harvest or Grazing | | |
|---|---|---|---|
| Insecticides | Cereals | Forage | Pastures |
| Decis | 40 | - not registered - | |
| dimethoate | 21 | 7 | 7 |
| Furadan | 21 | 1 | 1 |
| Lorsban | 60 | - not registered - | |
| malathion | 7 | 7 | 0 |
| Sevin | 14 | 2 | 1 |

***Warning***

Use insecticides only for insects and crops listed on the container label.

Before using any insecticide not recommended in this pamphlet, contact your area Agricultural Representative or a licenced pesticide dealer to ensure that the insecticide is registered under the Pest Control Products Act for the use intended.

## Pasture Management

Overgrazed pastures provide ideal egg laying sites for grasshoppers, and such areas become a potential source of hoppers migrating into

adjacent cropland.

The use of fertilizer, combined with rotational grazing, can substantially increase the productivity of pastures and reduce their attractivenss as grasshopper egg laying sites.

## Insecticides and Honeybees

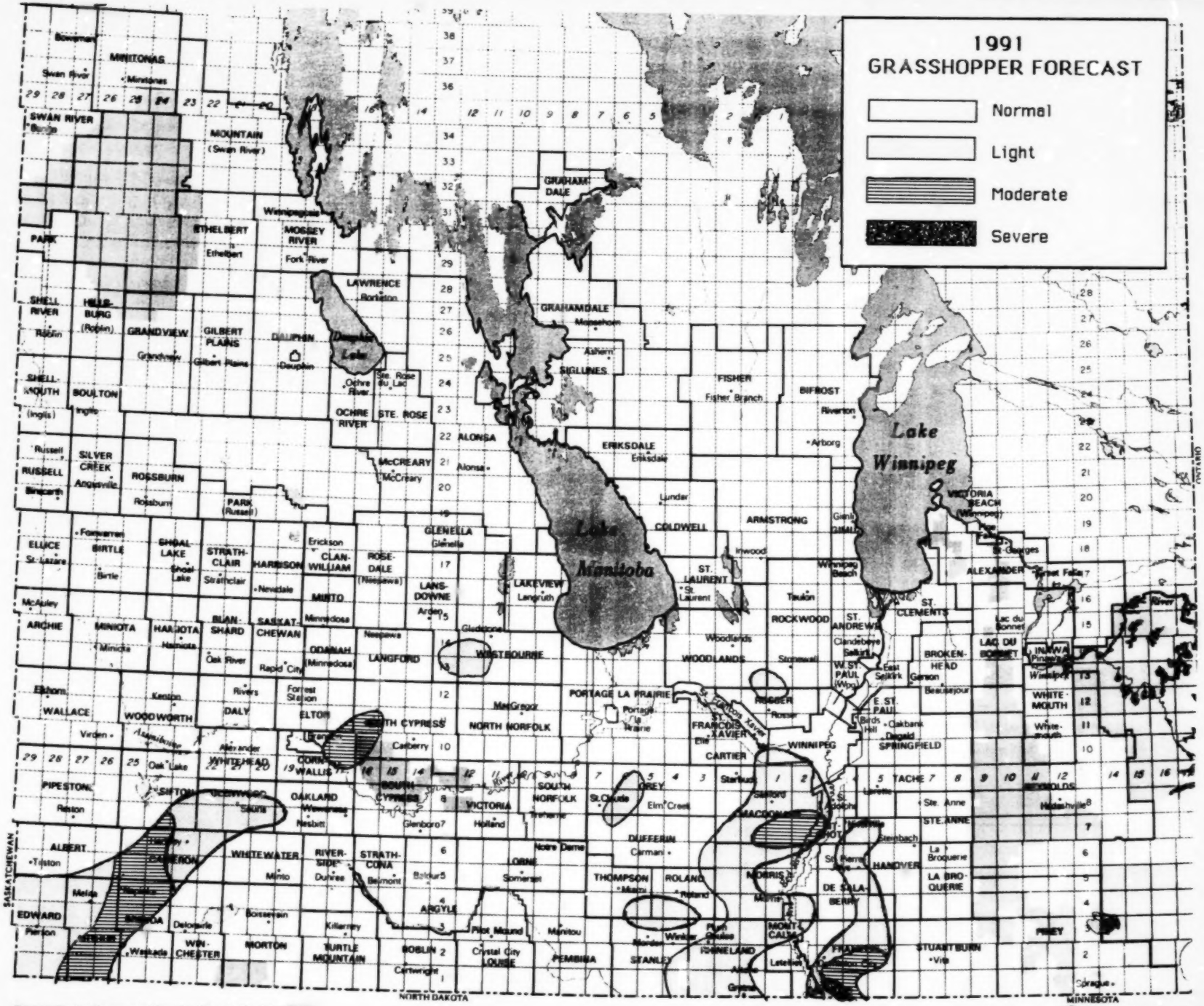
Insecticides used for grasshopper control are poisonous to honeybees. Do not apply any insecticides to plants which are flowering during the time of day when honeybees are active. If it is necessary to treat a crop in which honeybees are foraging, do so early in the morning or late in the evening when honeybees are not active.

Do not apply insecticides close to honeybee colonies. If honeybee colonies are in the vicinity of the area to be sprayed, contact the beekeeper prior to spraying.

## Care in Handling Insecticides

Insecticides should be handled carefully. Observe the following precautions:

1. Read the label.
2. Use extreme care in opening cans, pouring into tank, mixing, etc. Keep chemicals from contact with exposed skin and from getting on clothing and gloves. Where concentrated chemical accidentally comes in contact with the skin, wash off immediately.
3. Avoid inhaling fumes when mixing chemical, or when opening the spray rig. A respirator and protective clothing are recommended.
4. Wash thoroughly with soap and water before eating.
5. Change and wash contaminated clothing.
6. If symptoms such as nausea, headache, blurred vision, numbness in fingers occur when using pesticides, see a doctor immediately. Take the pesticide container label with you; it will aid the doctor in his/her treatment.

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